

What is Claimed Is:

1. A method to identify a therapeutic or prophylactic agent that modulates the response of a granulocyte population to a pathogen, comprising the steps of:
preparing a first gene expression profile of a quiescent granulocyte
5 population;
preparing a second gene expression profile of a granulocyte population exposed to the pathogen;
treating the exposed granulocyte population with the agent;
preparing a third gene expression profile of the treated granulocyte
10 population;
comparing the first, second and third gene expression profiles; and
identifying agents that modulate the response of a granulocytic population to the pathogen.
- 15 2. The method of claim 1, wherein the granulocyte population is selected from the group consisting of a population of neutrophils, basophils and eosinophils.
3. The method of claim 1, wherein the pathogen is selected from the group consisting of bacteria, viruses, fungi and parasites.
4. The method of claim 3 wherein the pathogen is selected from the group
20 consisting of Gram positive and Gram negative bacteria.
5. The method of claim 3, wherein the pathogen is selected from the group consisting of Staphylococci, Streptococci, Clostridia, Neisseria, Enterobacteriaceae, Helicobacter, Vibrio, Campylobacter, Pseudomonas, Haemophilus, Bordetella,

Mycoplasma, Ureaplasma, Legionella, Spirochetes, Mycobacteria, Actinomyces, Nocardia, Chlamydia, Rickettsia, Coxiella, Ehrlichia, Rochalimaea, Brucella, Yersinia, Francisella, and Pasteurella.

6. A method to identify a therapeutic agent that modulates the expression of at least one gene in a granulocyte population found in a subject having a sterile inflammatory disease; comprising the steps of:

preparing a first gene expression profile of a granulocyte population in a subject having the sterile inflammatory disease;

treating the granulocyte population with the agent;

10 preparing a second gene expression profile of the treated granulocyte population;

comparing the first and second gene expression profiles with the gene expression profile of a normal granulocyte preparation; and

15 identifying an agent that modulates the expression of at least one gene whose transcription levels are altered in the granulocyte population of the subject as compared with normal granulocyte population.

7. The method of claim 6, wherein the granulocyte population is selected from the group consisting of a population of neutrophils, basophils and eosinophils.

8. The method of claim 6, wherein the sterile inflammatory disease is selected from the group consisting of psoriasis, rheumatoid arthritis, glomerulonephritis, asthma, cardiac and renal reperfusion injury, thrombosis, adult respiratory distress syndrome, inflammatory bowel diseases such as Crohn's disease and ulcerative colitis and periodontal disease.

9. A composition comprising a grouping of nucleic acids that correspond to the genes or fragments of genes whose expression levels are modulated in a granulocyte population that has been exposed to a pathogen affixed to a solid support.

10. A composition comprising a grouping of nucleic acids that correspond to the genes or fragments of genes whose expression levels are modulated in a granulocyte population found in a subject having a sterile inflammatory disease affixed to a solid support.

11. A method of diagnosing exposure of a subject to a pathogen, comprising the steps of:

10 preparing a first gene expression profile of a granulocyte population from the subject;

comparing the first gene expression profile to a second gene expression profile of a granulocyte population exposed to the pathogen and to a third gene expression profile of a normal granulocyte preparation; and

15 determining if the subject was exposed to a pathogen.

12. A method of diagnosing a sterile inflammatory disease in a subject, comprising the steps of:

preparing a first gene expression profile of a granulocyte population from the subject;

20 comparing the first gene expression profile to at least one second gene expression profile from a granulocyte population from a subject having a sterile inflammatory disease and to a third gene expression profile of a normal granulocyte population; and

determining if the subject has a sterile inflammatory disease.

13. The method of claim 12, wherein the sterile inflammatory disease is glomerulo-nephritis.